

Contributions to the Flora of Western Australia—No. 5, by
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Eucalyptus Dielsii Gardner sp. nov.

Arbor pusilla, sive "Mallee," quindecim vel octodecim pedum altitudinus, e cortice plano-tenui, viridi-fuseo et trunco quinque vel septem unciarum diametri. Ligno tenaci, recte granulato, duro, pallide, fuso, denso.

Juvenibus foliis potius pallido-viridibus, parce petiolatis, tenuiter inaequalibus, pellucidis ex punctis oleosis, inconspicuis lateralibus venis angulum facientibus circiter 75 gradum cum costa centrali.

Maturiis foliis denso-rigidis, anguste lanceolatis, tenuiter falcatis, vel fere rectis, petiolatis, idem color utrinque habentibus costa centrali prominenti venis lateralibus circiter parallelis angulum efformantibus circiter 40 gradum cum costa media, vena intramarginali remota a margine.

Pedunculis generaliter axillaribus, modice planis et curvatis, sub umbella expansis, quae consistit ex tribus vel quinque floribus. Pedicellis tenuibus, sursum inerassatis. Operculo conico, dilatato super lineam commissuralem: tubo calyceo modice campanulato, disco efformante calycis prolongationem atque in gemmatione constituenti annulo staminali. Antheris oblongis longitudinaliter aperientibus, albicantibus, filamentis in gemma inflectis. Stylo crasso breviori staminibus, cum capitato stigmate.

Fructo urceolato-globulari, abrupte imminuenti versus pedicellam; margine distinete definita, protrusa et reflexa ita ut suspendentum limbum formet, summitate formam cupulae habente, valvulis deltoidis magis minusve planis cum capsula.

Foliis 7-12 cm. longitudinis, 10-17 mm. amplitudinis. Pedunculis circ. 2.5 cm. long: pedicellis modice supra 1 cm. long. Operculo 1 cm. long, 8 mm. amplitudinis supra basim. Calyci 6 mm. long. Fructo 1.3 cm. long, idemque in diametro.

Habitat prope SALMON GUMS, versus meridiem DUNDAS in argillosis constituentibus parvis silvis gignentibus *E. diptera*. Florescit mense Januario-Aprile.

Typus est No. 1051a, C. A. Gardner, et collectus fait per W. T. Brown, die 13a Januarii, 1925.

Nomenpatus in honorem L. Diels, illustris moderator Hortus Botanicus apud Berlin, qui extense peragravit Australiam occidentalem in principio hujus saeculi, quique tantum contulit historiae botanicae hujus regionis.

Huc species affinis est cum *E. erythronema*, a qua discrepat in speciali sculptura fructus, et breviori operculo.

Range.—The species appears to be confined to the forest flats between Salmon Gums and Dundas, occurring with *E. diptera* and *E. Flocktoniae*, forming low forests in the red clay soil.

Affinities:—

1. With *E. erythronema*.

This species is close to *E. erythronema*, but differs in being red-green barked, and is a tree. The fruit is ureolate not turbinate, and the summit is conspicuously domed. It is even closer to the var. *marginata*—a Wongan Hills plant. The staminal ring of both species lines the operculum, and can be distinguished externally as a ring like swelling, also has the appearance of overlapping the calyx. This is more conspicuous in *E. Dielsii* than in *E. erythronema*.

2. With *E. urnigera*.

There is a certain similarity in the fruits, but the Tasmanian plant has not the conical operculum or domed fruit of the new species.

3. With *E. eremophila*.

On account of its inflected stamens *E. Dielsii* cannot be placed within the *Cornutac*, but there are, however, several points of similarity between the two species. Maiden (crit. Rev. Gen. Euc.) has already pointed out a possible connection between *E. erythronema* and the *Cornutac*.

I am indebted to Mr. W. T. Brown, of Salmon Gums, for his untiring efforts to secure adequate material of this plant, which he first brought under my notice in 1924, and for his assistance in helping to elucidate several interesting points connected with the Eucalypts of this interesting district.

Gastrolobium densifolium Gardner sp. nov.

Frutex dense foliatus, parvus, diffusus, ex trunco lignoso ostendente ex antiquis foliis bases persistentes. Foliis oppositis, plus minusve congestis, diffusis, fibrici lanceolatis, basi angustis, acute pungentibus, punctis tenuiter recurvis, rigidis, crasso-marginatis, media costa dorsum prominenti. Petiolis pallidis, brevibus, planis. Stipulis lanceolatis, setaceis.

Racemis terminalibus, brevioribus, densis, rachi pubescentibus. Bracteis ovatis, concavis, fuscis, rigidis, punctis erectis breviter terminalibus prae-mature crenatibus, basi pubescentibus, marginibus ciliatis. Calycis segmentis aequalibus, duo superioribus ad medium junctis. Petalis circiter aequali longitudinis, vexillo eis modice longiori. Ovario ex brevi stipite sericeo-villoso. Style incurvato, glabro dimidia superiori parte tantum. Fructu non viso.

Affinis cum *G. floribundo*, *G. microcarpo*, et *G. oxylobioides*, ab eis discrepans in habitu, brevioribus, rigidis, diffusis, acutis, pungentibus foliis, aequalibus calycis segmentis, comparative longioribus stipulis, style et bracteis duabus ultimis speciebus similibus.

A bushy shrub of about 12 inches in height, with erect or spreading leafy branches, the older parts of the branches marked by the persistent petioles. Leaves opposite, somewhat crowded and imbricate, spreading, linear-lanceolate, narrowed towards the base, acute with a slightly recurved pungent point, thickly coriaceous and rigid, not at all glaucous and quite glabrous, the margins somewhat thickened, the midrib very prominent underneath, the veins reticulate. Petiole short and somewhat flattened. Stipules lanceolate, with thin setaceous points, gradually narrowed upwards.

Racemes all terminal, short and dense, the rachis pubescent. Bracts deciduous, ovate, brown, rigid and concrepate, the points breaking away before the bracts fall, the lower parts pubescent, the margins ciliate. Calyx shortly pedicellate, campanulate, white silky-villous, the lobes about as long as the tube, ovate-lanceolate, acute, all equal, but the two uppermost connate to about the middle. Standard nearly twice as long as the calyx, orbicular, yellow with purple striations; the wings and keel about as long, the latter purple. Ovary shortly stipitate, silky-villous; style incurved or hooked, glabrous in the upper half only. Fruit not seen.

Shrub 30 cm. high, spreading to at least the same in diameter. Leaves 1-1.5 cm. long, 3 mm. wide, the petiole about 1 mm. Stipules about 6mm. long. Racemes 2 cm. long and almost as wide. Calyx about 5 mm. long, the lobes 2.5 mm. long and 1.5 mm. wide. Standard about 9 mm. diameter, on a long claw; keel 7.5 mm. long.

In the DUDININ district, flowering in October, 1925 (Gottsch Bros.) Gravelly rises in the KUKERIN district, in thickets of *Eucalyptus redunca* var. *clata*, fl.m. Sept.-October (W. E. Blackall and C. A. Gardner, No. 1910). The Type.

The new species belongs to the section *Racemosae* of Bentham, with affinity to *G. floribundum*, *G. microcarpum* and *G. oxylobioides*. It is closest to *G. floribundum*, from which it differs in the much smaller acute thick leaves, much shorter petioles, somewhat longer (comparatively much longer) stipules, which are perhaps also broader, and equal and larger calyx-lobes, and in the racemes. The style is also hairy in the lower half. From *G. microcarpum* and *G. oxylobioides* it differs in habit, much thicker, smaller and more crowded leaves, which are also not glaucous, denser and shorter racemes, and other particulars.

The delineation of the species of *Gastrolobium* is so artificial, being based in some species on measurements and indumentum, that it becomes a difficult matter to define exactly the limits of these species. Such differences, for example, between *G. microcarpum* and *G. oxylobioides*, are very much less than those which separate the varieties of *G. spinosum*. The proposed new species is very different in habit from any of the *Gastrolobiums* known to me, and the rigid crowded leaves are suggestive more of a *Pultenaea* than a *Gastrolobium*.

Gastrolobium densifolium is a poison plant. An investigation into its toxicity was undertaken by H. W. Bennetts, Veterinary Pathologist of the Department of Agriculture, Perth. The material used was in a dried condition, and was fed to guinea-pigs. The experiment on the first animal was discontinued on the fourth day. The second guinea-pig, which ate 7 grams of leaves in three days, was dead on the fourth day. The symptoms shown by the first animal were, rough coat, inappetence, shivering and erratic movements. The animal completely recovered on the sixth day. On post mortem examination the second animal showed congestion of the organs, notably liver, kidneys and lungs.

EXPLANATION OF PLATE VII.

Eucalyptus Dielsii Gardner—The type.

A.— $\frac{1}{2}$ natural size.

B, C, D, and E.— $1\frac{1}{2}$ times natural size.

F.—Front and back view of anther (enlarged).